

Applicant : Gilbert Wolrich et al.
Serial No. : 10/069,229
Filed : December 11, 2002
Page : 2 of 13

Attorney's Docket No.: 10559-305US1 / P9626US

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Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A ~~computer instruction~~, method of operating a processor ~~comprises comprising:~~
executing a branch instruction that causes a processor to branch from executing a first sequential series of instructions to a different sequential series of instructions based on a byte, specified by the branch instruction, in a register, specified by the branch instruction, being equal or not equal to a specified byte value, specified by the branch instruction, if the specified byte matches or mismatches the specified byte value.
2. (Currently amended) The ~~instruction~~ method of claim 1 wherein the branch is to an instruction at a specified label.
3. (Currently amended) The ~~instruction~~ method of claim 1 wherein the branch instruction comprises:
a bit postion field that specifies the byte in a longword contained in the register.
4. (Currently amended) The ~~instruction~~ method of claim 1 wherein the branch instruction comprises:
an optional token that is set by a programmer and specifies a number *i* of instructions to execute following the branch instruction before performing the branch operation.
5. (Currently amended) The ~~instruction~~ method of claim 1 wherein the branch instruction comprises:

Applicant : Gilbert Wolrich et al.
Serial No. : 10/069,229
Filed : December 11, 2002
Page : 3 of 13

Attorney's Docket No.: 10559-305US1 / P9626US

an optional token that is set by a programmer and specifies a number *i* of instructions to execute following the branch instruction before performing the branch operation where the number of instructions can be specified as one, two or three.

6. (Currently amended) The ~~instruction~~ method of claim 1 wherein the register is a context-relative transfer register or a general-purpose register that holds the operand.

7. (Currently amended) The ~~instruction~~ method of claim 1 wherein the branch instruction comprises:

an optional token that is set by a programmer and which specifies a *guess_branch* prefetch for the instruction for the "branch taken" condition rather than the next sequential instruction.

8. (Currently amended) The ~~instruction~~ method of claim 1 wherein the branch instruction comprises:

an optional token that is set by a programmer and specifies a number *i* of instructions to execute following the branch instruction before performing the branch operation; and

a second optional token that is set by a programmer and which specifies a *guess_branch* prefetch for the instruction for the "branch taken" condition rather than the next sequential instruction.

9. (Currently amended) The ~~instruction~~ method of claim 1 wherein the branch instruction allows a programmer to specify which bit of the register to use to determine the branch operation.

10. (Currently amended) The ~~instruction~~ method of claim 1 wherein the branch instructions allows branches to occur based on evaluation of a byte that is in a data path of a processor.

Applicant : Gilbert Wolrich et al.
Serial No. : 10/069,229
Filed : December 11, 2002
Page : 4 of 13

Attorney's Docket No.: 10559-305US1 / P9626US

11. (Currently amended) The ~~instruction~~ method of claim 1 wherein the branch instruction branches on ~~[[a]] the~~ byte matching the byte value and wherein the instruction prefetches the instruction for the "branch taken" condition.

12. (Currently amended) The ~~instruction~~ method of claim 1 wherein the branch instruction branches on ~~[[a]] the~~ byte not matching the byte value and wherein the instruction prefetches the next sequential instruction.

13. (Currently amended) The ~~instruction~~ method of claim 1 wherein the branch instruction includes a Byte_spec Number that specifies the byte in the register to be compared with byte_compare_value.

14. (Currently amended) A computer program product residing on a computer readable medium ~~for causing a processor that executes multiple contexts to perform a function~~ comprises comprising instructions, including a branch instruction that causing the causes a processor to:

fetch a byte, specified by the branch instruction, stored in a register, specified by the branch instruction;

determine whether the byte in the register is equal or not equal to a specified byte value contained in the branch instruction; and

perform a branching operation specified by the branch instruction based on the specified byte being equal or not equal to the byte in the register.

15. (Original) The product of claim 14 wherein the branch is to an instruction at a specified label.

Applicant : Gilbert Wolrich et al.
Serial No. : 10/069,229
Filed : December 11, 2002
Page : 5 of 13

Attorney's Docket No.: 10559-305US1 / P9626US

16. (Currently amended) The product of claim 14 wherein the ~~program includes a~~ branch instruction that comprises:

a bit _postion field that specifies the byte in a longword contained in the register.

17. (Currently amended) A processor comprises:

a register stack;

an arithmetic logic unit coupled to the register stack and a program control store that stores a branch instruction that causes the processor to:

fetch a byte, specified by the branch instruction, stored in a register, specified by the branch instruction;

determine whether the byte in the register is equal or not equal to a specified byte value contained in the branch instruction; and

perform a branching operation specified by the branch instruction based on the specified byte being equal or not equal to the byte in the register.

18. (Currently amended) The processor of claim 17 wherein ~~instructions to the~~ branch instruction that causes the processor to perform the branching operation causes the processor to branch ~~branch~~ to an instruction at a specified label.

19. (Currently amended) The processor of claim ~~[[1]]~~ 17 wherein a bit _postion field in ~~[[an]]~~ the branch instruction specifies the byte in a longword contained in the register.

20. (Currently amended) A method of operating a processor comprises:

executing a branch instruction by~~[[:]]~~ ;

fetching a byte, specified by the branch instruction, stored in a register, specified by the branch instruction;

determining whether the byte in the register is equal or not equal to a specified byte value contained in the branch instruction; and

Applicant : Gilbert Wolrich et al.
Serial No. : 10/069,229
Filed : December 11, 2002
Page : 6 of 13

Attorney's Docket No.: 10559-305US1 / P9626US

performing a branching operation specified by the branch instruction based on the specified byte being equal or not equal to the byte in the register.

21. (Currently amended) The method of claim 20 wherein performing the branch includes branches branching to an instruction at a specified label.